The University of North Carolina at Greensboro

JACKSON LIBRARY

CQ
no. 1341

UNIVERSITY ARCHIVES

STEPHENS, SALLY MCCARTNEY. The relationship of Parents' Food Preferences to Children's Food Preferences. (1975) Directed by: Dr. Aden Magee and Dr. Helen Canaday. Pp. 68.

The purposes of this study were to determine if parents' food preferences are related to children's food preferences, to determine if parents assume that their food preferences are shared by their children, and to determine if parents' food preferences may decrease children's chances of eating a balanced diet. Information was also collected concerning how parents predict children's food preferences.

Participants in the study were 25 three- and four-year-old children attending the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, The University of North Carolina at Greensboro. The parents of the 25 children also participated in the study. Questionnaires were sent to the parents asking them to individually rate their preference for foods listed and to estimate their child's preference for the same foods. Parents were instructed to refrain from discussing their answers with their spouse or with the child or children. One parent was also asked to complete a three day dietary recall of all foods eaten at home by the child or children.

At the Nursery School the children were served lunches consisting of the foods listed on the questionnaires for four days of each week for four weeks. The children were served cafeteria style chosing the foods they desired. Foods

chosen were served to the children in standardized portions. Plate waste was weighed and recorded for each child every day.

Mothers' food preferences were found to be positively related to children's food preferences while fathers' food preferences were negatively related to children's food preferences. Fathers assumed that children's food preferences were similar to their own, but mothers did not. Both mothers and fathers could predict children's food preferences at a significant level although mothers were slightly more accurate. Fifty-two per cent of the children had diets deficient in the fruit and vegetable group and 36 per cent had diets deficient in the milk and dairy product group. No significant relationship was found between these deficiencies and the parents' preferences. Children preferred plain foods to mixtures and white bread to brown bread or crackers. They preferred chocolate ice cream to strawberry or vanilla and chocolate pudding to vanilla. Vegetables were least liked as a group and milk and dairy products were most frequently chosen.

THE RELATIONSHIP OF PARENTS' FOOD PREFERENCES TO CHILDREN'S FOOD PREFERENCES

by

Sally Stephens

A Thesis Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Greensboro
1975

Approved by

Adon C. Magee
Thesis Coadviser

Helen Canada
Thesis Coadviser

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

Thesis Coadviser Aden C. Magee

Thesis Coadviser Helen Canaday

Committee Members Sharon K. Sumner

Barbara Clawson

July 7, 1975
Date of Acceptance by Committee

ACKNOWLEDGEMENTS

The researcher would like to express special thanks and appreciation to the following people without whom this research would not have been possible: Dr. Aden Magee, faculty adviser and research director; Dr. Helen Canaday, research director; Mrs. Sheron Sumner and Dr. Barbara Clawson, members of the graduate committee; Mrs. Lois Coe, Nursery School cook; Nursery School teachers and staff and graduate students who assisted in the research.

TABLE OF CONTENTS

491986

CHAPTER I

INTRODUCTION

It is a well known fact that children's nutritional status cannot be based on the foods served to them, no matter how wisely planned or well prepared the foods are. Only the foods eaten by children may contribute to their nutritional status. Acceptance of a wide variety of foods plays a major role in good nutrition for young children. Food preferences are formed early in life and, once formed, are not easily changed.

Parents are thought to have a great influence on the eating habits of young children. This includes children's attitudes toward food in general and, more specifically, their preferences for certain foods. Robinson (1972) stated that for each child "food becomes a language of communication; it has cultural and social meanings; it is intimately associated with the emotions; and its acceptance or rejection becomes highly personal (p. 321)." She further states that when children have good food habits, "the food habits are part of satisfying human relationships and contribute to social and personal enjoyment (Robinson, 1970, p. 321)."

Poor food habits can not only detract from personal and social enjoyment but can also interfere with good

nutrition. Dislikes of specific foods or groups of foods can be so pronounced that the foods are not eaten, which as a result could contribute to a nutritional deficiency in children. According to the Texas State Department of Health (1964), "young children need a balanced diet made up of a variety of foods to help them grow and develop into well-adjusted, healthy adults. Food must be wisely planned and properly cooked (p. iii)."

Purpose of the Study

The primary objectives of this study were:

(1) to determine if parents' food preferences contribute to the food preferences of three- and four-year-old children.

(2) to determine if parents assume that their own food preferences are shared by their three- and four-year-old children.

(3) to determine if parents' food preferences serve to decrease their children's acceptance of certain foods and chances of eating a balanced diet.

It is the belief of the present researcher that to study the relationship of parents' food preferences to children's food preferences would add to the field of child nutrition, provide information for group discussion at parent conferences, provide material for parent education and nutrition education classes, as well as to serve as the

basis for future research. A further purpose was to compare the results of this study with those of a similar study conducted with the Nursery School children in 1963 by Hodge. The present researcher was interested in a comparison of children and parents in a twelve year interval as recommended by Hodge. Hodge (1963) found no significant relationship between parents' food preferences and children's food preferences at the time of her study.

Limitations of the Study

A major limitation existing before the study was conducted was a small group of available test subjects. The participants of the study included 25 three- and four-year-old children attending the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, the University of North Carolina at Greensboro. The parents of the children also participated in the study.

All of the foods served to the children during the study, except raw squash and raw broccoli, had been served previously at the noon meal in the Nursery School. It was assumed, therefore, that the children were familiar with the foods. During the study, the foods were prepared in the same manner in which they were regularly served to the children. It was further assumed that if the children had objected previously to the manner of preparation of the food and not to the food itself, this would hold true for the present study.

For ten weeks before the study the parents were instructed to refrain from discussing foods, particularly those listed on the questionnaires. These instructions were given in order to avoid prejudicing the children about foods. Parents were also instructed to answer the questionnaires independently, and they were asked not to discuss their answers with their spouse. No check was made to ascertain if the instructions were followed.

A dietary recall was used to determine the adequacy of the children's diets. Parents estimated the amounts of foods eaten by their children and the accuracy of these estimations could not be determined. For the purpose of this study Robinson's recommendation for the food needs of preschool children was used to evaluate the adequacy of the diets of the Nursery School children.

Definitions

It should be pointed out that for this study food preferences refers to those foods which are chosen instead of or liked better than some other foods. This is not to be confused with food habits which are a tendency to perform or act in a certain way.

For the purpose of this study the servings of foods were defined in the following way:

Meats and meat substitutes - 1 tablespoon

Vegetables, cooked - 1 teaspoon

Vegetables, raw - 1 piece

Bread - 1/3 slice or 1 cracker

Milk - 2 ounces

Cookies - 2

Fruit - 1 piece or 2 tablespoons

Pudding - ¼ cup

Ice cream - ½ cup

These amounts were based on the amounts of foods served and eaten by the children at the Nursery School.

For the present study, Nursery School, capitalized, refers to the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, the University of North Carolina at Greensboro. Any other nursery schools mentioned will be specifically named.

CHAPTER II

REVIEW OF LITERATURE

In searching the literature two major areas were considered: feeding young children and food consumption and preference studies. Chapter II was organized into two sections according to the topics reviewed.

Much has been written about the nutritional needs of children. According to Robinson (1972, p. 327) preschool children should consume the following each day:

2 cups of milk
1 egg
1-3 ounces of chopped meat, fish, or poultry
4 ounces of orange juice or other source of ascorbic acid
2-4 tablespoons of other fruit such as banana, peaches, pears, apple, prunes, apricot
2-4 tablespoons of vegetables, including deep yellow and dark green leafy vegetables
1 small potato
1 raw vegetable such as carrot sticks, cabbage slices, lettuce leaves, or tomato
1/3-2/3 cup of enriched or cooked cereal
1-3 slices of enriched or whole grain bread
400 I.U. vitamin D, either as fortified milk or as a concentrate

This guide is commonly used to teach the nutritional requirements of preschool children.

The importance of good nutrition for children has been well documented and will not be reviewed in this study, but it is hoped that the results of this study will contribute to better nutrition for children because nutrition does play

such an important role in growth and development. The National Academy of Sciences has mentioned some effects of poor nutrition on development. The Academy stated that "some of the changes occurring due to moderate to severe malnutrition early in the child's development are a decrease in brain weight, cell number, cell size, cellular organization and myelin formation. The most marked effects are seen in areas where cell division is most rapid (National Academy of Sciences, 1973, p. 2)."

Feeding Young Children

An area of major concern to parents and nutritionists is that of feeding young children. There are many problem eaters among three- and four-year old children. Often these children are a frustration to their parents and a challenge to nutritionists. Because of the parental and professional concern there is some information supported by research and a wealth of informal information about feeding young children.

In their booklet "The Child's Meals are Family Meals" Sweeny and Eichelberger (1971) suggested that children need foods that keep all parts of their bodies in good working order and that help them resist disease. Children need foods that supply energy for activities and that develop and maintain firm muscles.

Children's attitudes will influence how they eat. Sweeny and Eichelberger (1971) believe that if children are healthy, happy and active, they will be eager for food, providing eating is treated in a matter-of-fact way.

The Texas State Department of Health (1964) lists some suggestions for planning menus for young children. Children like mild foods which are easy to eat. Variety in size, color, shape, texture, flavor and form are as important to the child as to the adult. Only one new food should be introduced per meal and some finger foods should be included at all meals.

Food is More Than Just Something to Eat (USDA) is a nutrition publication of the USDA written for children, teachers and parents. This publication reported that children in this country often do not get as much vitamin A and C as they need. Parents need to try especially hard to include dark green and deep yellow vegetables such as broccoli, collards, kale, carrots, sweet potatoes, and winter squash to supply vitamin A. Children may be short of ascorbic acid because they do not eat enough citrus fruits or jucie, tomatoes, raw cabbage, or other foods which are rich sources of ascorbic acid.

In a report by the North Carolina State Board of Health, Nutrition Section, some characteristics of young children are listed. "Mother - This is for You" (1965) reminds the mother that children often copy adults, learn to

like the foods their parents like, need their parents help in selecting a nutritionally balanced diet, vary the amounts of food eaten, and suddenly refuse their favorite foods. Some of the suggestions for encouraging children to eat offered by the North Carolina State Board of Health (1965) were to give small servings, let the child ask for seconds, offer tastes of new foods, prepare foods simply, serve finger foods, and serve colorful foods at each meal.

In addition to these, Aldrich and Lowenberg (1954) advised parents not to expect food intake to increase noticeably during the preschool years. They also suggested that regular mealtimes be established and that meals be eaten in a definite place. Table manners should not be an issue but parents should set an example for children to follow. Parents should be prepared for dawdling and spills.

Children should not be forced to eat when tired and sleepy, warn Sweeny and Eichelberger (1971). They suggested that the attractiveness of the food influences the amount eaten, that mealtimes should be enjoyable, and that conversation should be diverted away from food.

In a group setting, as reported in the New York Times Magazine (1970), children accept meals much better when teachers and staff eat with them. "Your Child's Appetite" published by Ross Laboratories (1960) suggested that contact with school lunches and other children will broaden children's tastes.

Food Consumption and Preference Studies

In a survey of two tousand households containing 3,444 children ages birth to six years, Eppright, Fox, Fryer, Lomkin and Vivian (1969) found that by three years of age many children have developed a dislike for certain foods, especially vegetables. They also found that food dislikes were more closely related to older siblings dislikes than to the dislikes of the parents and that the dislikes are more associated with the father than the mother. They further suggested that this may have been due to the fact that 81 per cent of the women surveyed said that their husbands' likes were the major influence on what foods were served.

Hodge (1963) found no significant relationship between parents' food preferences and the preferences of nursery school children. She also found that although neither parent could accurately predict his or her child's food preferences, the fathers' predictions were more consistant with the children's food preferences than the mothers' predictions.

In 1935, McCarthy reported that children are much more likely to be influenced by other children's food habits than by the food habits of adults. In contrast to the previous study, McCarthy found a tendency for items not offered to parallel more with the dislikes of the mother than those of the father or siblings. Her data showed that with

increasing age, children have a growing indifference to food, and they have fewer strong likes and dislikes which could influence their nutritional status.

Least liked foods noted by the children in the McCarthy (1935) study were cereal, eggs, and vegetables. Fruits were best liked followed by meats, desserts, and dairy foods, in that order.

In a study done at the Nursery School, in the Department of Child Development and Family Relations, School of Home Economics, The University of North Carolina at Greensboro Fesmire (1965) investigated selection and consumption of food by the children. Desserts, cheese, meats, and meat substitutes were most frequently selected by children. These results are similar to those found by McCarthy (1935) in the previous study. Of the vegetables served, green beans, green peas, and buttered potatoes were most frequently selected while carrots, beets, and broccoli were least frequently selected. Raw carrots were preferred to cooked carrots by a ratio of three to one. Vegetables as a group were the least preferred foods. Finger foods were seldom selected or eaten.

Children are a much more important influence on the mothers' buying than are husbands according to a survey of 844 adults by Dickins (1965). Mothers reported that most requests by children for foods were granted.

An early study done by Davis (1935) concerned the self-selection of food by children at the orthopedic ward of Children's Memorial Hospital of Chicago. The maximum number of children participating at any time during the study was 31 and the average was 28 per week. The children varied in ages from one to twelve years. It was found that the children of this study ate only three or four foods heartily at each meal and that "it is only of liked foods that children of their own volition eat as heartily as their condition will allow (Davis, 1935, p. 404)."

According to Davis (1935), when children were allowed to chose the foods they wanted in the amounts that they wanted from a variety of foods they had better appetites, larger food intakes, and happier mealtimes. The children judged how much they could eat much better than any adult did.

The children in the Davis (1935) study preferred plain foods with the exception of spaghetti, which was one of their favorite foods. Fresh fruits were liked by all children and compared favorably with ice cream as a favorite dessert. Vanilla ice cream was preferred to chocolate or strawberry. Favorite vegetables were peas, beets, and raw carrots. Lettuce and spinach were also eaten in large amounts. Vegetables eaten in the smallest amounts were cauliflower, turnips, squash, and parsnips.

Bryan and Lowenberg (1958) found in their study that a significant relationship did exist between the child's and the father's food preferences. They studied 61 children between the ages of two years 11 months and four years 11 months and their fathers. The father's main influence was in limitation of the variety of foods eaten. Vegetables were least preferred by children, while vegetables and breads were least preferred by the fathers. Fats (butter and margarine) and milk were most liked by children and milk and fruit were most favored by fathers.

In the Bryan and Lowenberg (1958) study some of the reasons given by fathers and children for food dislikes were taste, odor, texture, appearance, method of preparation, ease of eating, time required to eat the food, frequency of offering, availability as a child, association of food with its origin or with an event and difficulty of digestion. Squash, sweet potatoes, spinach, fish, lamb, cooked cereal, combinations, and liver were foods which mothers said were not served due to the father's dislike.

One hundred and twenty-one children, ages two to six years, were the subjects of a study of food habits by Dierks and Morse (1965). Within this group of children, vegetables were most frequently disliked or not eaten, with beets and corn being the best liked and spinach, squash, asparagus, lima beans and sweet potatoes being the least liked or most frequently not eaten.

Prevey (1936) studied self-service in a nursery school and found this to be a means of increasing consumption of cooked and raw vegetables, desserts, meat, and bread. The children ate more of those foods when they served themselves than when they were served by adults. Less milk and potatoes were consumed when the children served themselves. It is important to note that the sample for this study was limited to seven children.

Justice, Mattson, and Schuck (1946) studied self-service versus standard service at the Purdue Nursery School. Fourteen children participated in the study. These children ate more protein, more raw and cooked vegetables, more dessert, and more rice when they served themselves as compared to standard plate service. Less milk was drunk with the self-service method.

In 1967 at the Nursery School, King studied the relationship of the order of presentation of vegetables to the amount selected and consumed by nursery school children. Participants were 25 three- and four-year-old children attending the Nursery School. Of the vegetables served, more green peas and green beans were consumed than any other vegetables. Raw vegetables were generally preferred to cooked vegetables. More cooked vegetables were eaten when served before raw vegetables. King found a high correlation between all vegetables selected and consumed by the children.

The reasons for food acceptance and rejection by children have been studied by many. Ilg (1948) observed that at the age of three the preference for milk rises, meat becomes a favorite, and sweets and desserts are especially desired. The four-year-old has food jags and strikes and prefers plain foods. He is influenced by the habits and preferences of others.

Rejection often results due to texture according to Lowenberg (1948). Preschoolers like mild foods which are soft, crisp, or crunchy and are moist and lukewarm. Lowenberg (1948) further suggested that the three-year-old is not adventuresome in trying new foods. The four-year-old may like some colder foods. Often preschoolers will reject foods which are stringy, strong-flavored or dry.

Metheny, Hunt, Patton and Heye (1962) learned that foods which are unfamiliar to or disliked by the parents are often unfamiliar to the child. Metheny (1962) suggested that this is due to the fact that the parents tends to serve few foods which they themselves dislike or have not eaten.

In a study done to determine children's preferences among certain school lunch dislikes, Baker and Ehlers (1949) worked with children in rural, suburban, and city elementary and high schools. It was discovered that the name of the dish as well as previous experience affected selection. The effect of the name of the dish on selection was illustrated by the fact that only nine per cent of the students selected

"creamed eggs on a biscuit" while 38 per cent selected "eggs a la king on a biscuit." The location of the food on the counter did not influence selection.

The importance of good nutrition for children as well as the importance of the relationship of good nutrition to food preferences have been well documented. Few recent studies have been done to determine the relationship of parents food preferences to childrens food preferences. It is hoped that this study will contribute to the field of child nutrition by exploring the relationship between parents' food preferences and children's food preferences.

CHAPTER III

METHOD

Briefly, the purpose of the study was to determine if parents' food preferences are related to the food preferences of nursery school children and to determine if parents' food preferences may decrease children's chances of eating a balanced diet.

Selection of Subjects

Twenty-five three- and four-year-old children attending the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, the University of North Carolina at Greensboro and their parents participated in the study. The group included all children attending the morning session during the time the study was conducted. All of the children and parents who participated were considered middle or upper middle income families with similar social backgrounds. Eleven of the children were girls and 14 were boys.

Data Collection from Parents

Each parent received two sets of questionnaires. Both of these sets contained lists of foods served at the Nursery School. (See Appendices A and B). On the first set,

which was sent the week before data collection began, each parent was instructed to put a check on the left side of each food served regularly in his home. He was then instructed to rate each food using the columns: dislike very much, dislike somewhat, accept indifferently, like somewhat, like very much. Foods listed on this questionnaire were grouped in food groups and listed in alphabetical order within the group.

One week later each parent was sent another set of lists of the same foods. (See Appendix B). The foods on this list were listed in alphabetical order. The parents were instructed this time to check in the column to the left of the foods all foods served regularly in their home. Then using the columns to the right, each was asked to predict his child's or children's reaction to each food.

During the last week of data collection, one parent, either mother or father, was instructed to keep a record of all foods eaten at home by the child on three specified days. These records, when combined with the foods eaten by the child at the Nursery School on those days, were used to determine if the children were eating foods to meet their recommended daily requirements.

Pilot Study

A pilot study was conducted for two days in order to determine the best procedure to use for serving the children,

Following each pilot test the researcher met with the teachers, graduate assistants, director, and cook to discuss the procedure. Appropriate suggestions were used in revising the procedure.

Method Used in the Study

For a period of 16 days, Tuesday through Thursday of four consecutive weeks, the noon meal was served cafeteria style in the dining room. The children sat at five tables with the same teacher or graduate student seated at each table every day. The children were assigned their dining room seats and sat at the same place each day. Two tables were used to set up the cafeteria service. The food was arranged on these tables and was served from them.

The teachers and graduate students at each table received instructions from the researcher. (See Appendix C). They did not eat with the children but recorded on forms provided by the researcher. They were instructed to eat after the children, rather than with them; to indicate on the form each child's physical and emotional state; to record on each child's form the number of servings of each food which the child received on his or her plate; to refrain from discussing food with the children; to ask each child to place his name card in his plate and return it to the researcher when he or she finished eating; to place a name sticker on each dessert dish as the children finished

and to return all forms to the researcher at the end of the meal.

The researcher kept a record of plate waste for all children. (See Appendix E) The children were served milk in disposable glasses which were labeled with their names and at the end of the meal the amount of milk left was also recorded by the researcher.

Each day before lunch the children were issued numbered tags by the director. The children were told that these were their lunch tickets. Children were randomly assigned numbers each day. The number on the card indicated the order in which the children would enter the dining room. As the children approached the cafeteria tables, they gave their numbered cards to the researcher.

Servers received instructions each day before lunch by the researcher. (See Appendix D) They were instructed how to serve a standard portion of each food, that milk was served previous to the meal and placed on the tables, to alternate the order of the foods offered to the children in order to avoid influencing the children's choices, and to require that the children name the foods they wanted.

The foods were placed on the serving table each day in randomized order. Milk was placed on the tables before the meal and children returned to the serving table for additional servings of milk.

The menu contained many foods previously served in the Nursery School and some new foods. Each day at least one food was presented in both a plain and a mixed form, such as tuna chunks and tuna casserole. The foods were cut into standardized servings whenever possible. The food was prepared by the full-time cook with some assistance from a college student and the researcher. Each meal consisted of a meat or meat substitute, two cooked vegetables, one raw vegetable or fruit, a bread, a dessert and milk.

At the conclusion of data collection each child was interviewed individually by the researcher. (See Appendix F). The interviews were conducted to compare children's verbal accounts of food perferences with their intakes.

Data Collection

For sixteen days the noon meal at the Nursery School was served cafeteria style with the children entering the dining room in random order and selecting their food from a group of selected foods. The children indicated to the server which foods they desired, and after being served, carried their plates to their regular places in the dining room. While the children ate, a teacher or graduate student recorded the children's food selections on a form provided by the researcher. A pre-weighed sample of each food being served was used as the basis for conversion of the amount of food eaten by the children. Weights were recorded to the nearest tenth of a gram using a triple beam balance.

The method used for determining the children's food consumption was to weight plate waste each day for all children. The plate waste was then subtracted from the food served to the children, thus giving an indication of the amount of each food consumed. The amount of food consumed was expressed as a percentage of the total food served.

Data Analysis

The product moment method of correlation was used to determine relationships between parents' food preferences and children's food preferences, between parents' food preferences and their predictions of children's preferences, and between parents' predictions of children's food preferences and the children's actual intake. Values of one to five were assigned to the columns on the questionnaires with "dislike very much" having a value of one and "like very much" having a value of five. A total score was determined for each questionnaire by multiplying the number of checks in each column by the value assigned to that column. An average value was then calculated for fathers' perferences, mothers' preferences, and for each parent's estimation of his child's preferences. Dietary intake records were evaluated using Robinson's (1972) guide to food needs of preschool children. A child was judged to be deficient in a food group if his intake of foods in that group was below the recommendation on at least two of the three days on

which a dietary recall was supplied. Frequency of selection was determined for mixtures versus plain foods, for dark bread versus white bread and crackers, for chocolate ice cream versus strawberry or vanilla and for chocolate pudding versus vanilla.

CHAPTER IV

RESULTS AND DISCUSSION

A study was conducted to determine if parents' food preferences are related to children's food preferences, to determine if parents assume that their food preferences are shared by their children, and to determine if parents' food preferences may tend to decrease children's chances of eating a balanced diet. Twenty-five three- and four-year-old children attending the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, The University of North Carolina at Greensboro and their parents participated in the study. Questionnaire return was 100 per cent.

The product moment method of correlation showed that for this sample, there was a significant relationship between fathers' food preferences and their estimation of children's food preferences ($r = .56$, $p < .01$); whereas, there was not a significant relationship between mothers' food preferences and their estimation of children's food preferences. (See Appendix G) When mothers' and fathers' preferences were correlated with children's intake, it was found that fathers' preferences were inversely related to children's preferences ($r = -.87$ etc., $p < .01$), and that

mothers' preferences significantly influenced children's food preferences (r=.69, $p < .01$). Both mothers (r = .63, $p < .01$) and fathers (r = .47, $p < .05$) could predict their children's food preferences at a significant level with mothers having more accuracy than fathers. (See Table 1)

Diet recall for three days along with the record of foods eaten at the Nursery School on those days were analyzed for each child. Thirteen children (52 per cent) had diets deficient in the vegetable group on at least two of the three days. Of the 52 per cent deficient in the vegetable group, six fathers, (46 per cent) of the fathers of the deficient children, indicated a dislike for at least 20 per cent of the vegetables listed. One child (four per cent) was deficient in meat on at least two of the three days and nine children (36 per cent) were deficient in the milk group on at least two of the three days. Seventeen children (68 per cent) of the entire group chose foods from the vegetable group less frequently than any other group.

No mothers or fathers indicated a liking for more than 80 per cent of the foods in the meat group which were listed. Four of the children or 16 per cent chose foods from this group less frequently than from the other groups.

Of the nine children who were deficient in the milk group, three mothers (33 per cent) and one father (11 per cent) indicated a dislike of at least 20 per cent of the foods listed in the milk group. No children were deficient

in the bread group although four (16 per cent) chose foods from this group less frequently than from any other group.

A check of the average frequency of foods chosen by the 25 children showed that foods in the milk group were chosen more frequently (1.07 times/serving) than any other group. Vegetables and fruits were chosen with the least frequency (.68 times/serving). Meats were chosen the most frequently (.96 times/serving) after the milk group, with bread being chosen .86 times/serving. "Times/serving" is the number of times a food was chosen divided by the number of times the same food was served.

Of the 22 foods served to the children in mixed and plain form, 33 per cent of the time the children chose the mixtures, while 67 per cent of the time the children chose the food in plain form. Chocolate ice cream was chosen 55 per cent of the time, strawberry ice cream 34 per cent of the time, and vanilla ice cream 11 per cent of the time. Chocolate pudding was preferred by a ratio of five to one.

French bread was chosen 86.7 per cent of the times it was served. White bread was next in popularity being chosen 76.4 per cent of the times it was served. These were followed by oatmeal bread, chosen 45 per cent of the times served; cracked wheat bread, chosen 42.9 per cent of the times served; saltine crackers, chosen 42.5 per cent of the times served and rye bread, chosen 40 per cent of the time served.

The first objective of this study was to determine if parental food preferences are related to the food preferences of three- and four-year-old children. The results indicated that for this group of children, the mothers' food preferences did significantly influence the preferences of their children. Conversely, the fathers' preferences had a strong negative influence on the children's preferences. In a similar study done by Hodge (1963) at the Nursery School, no significant relationship was found between children's food preferences and those of either the mother or the father. In a span of 13 years the parental influence on children's food preferences had changed greatly for children attending the Nursery School. A possible explanation for this could be that children and parents were eating more meals together. Fewer children in this sample ate with maids than in the Hodge (1963) study. The researcher could not determine the cause of the negative relationship between fathers' preferences and those of the children. This was in contrast to results found by Bryan and Lowenberg (1958) who found a significant relationship between the fathers' and children's food preferences.

The second objective of the present study was to determine if parents assumed that their own food preferences were shared by their children. It was found that the fathers of this group of children did assume that their children's preferences were similar to their own, while the

mothers did not assume that their children's food preferences were similar to their own. One possible explanation for this could be that the mother usually cooked the child's meals and was more aware of the child's actual likes and dislikes. The father, because he may not have been as familiar with the child's preferences, may have assumed that they were like his own. It was found that both mothers and fathers could predict their children's preferences to a significant degree, although mothers were more accurate than fathers. This is in contrast to the Hodge (1963) study which found that fathers could more accurately predict children's food preferences.

A third objective was to determine if parental food preferences decreased the children's chances of eating a balanced diet. Based on data collected, the conclusion could not be drawn that parental food preferences decreased the children's chances of eating a balanced diet. Although 52 per cent of the children had diets deficient in the fruit and vegetable group, no mothers and 46 per cent of the fathers of the deficient group indicated a dislike of 20 per cent or more of the vegetables listed.

Thirty-six per cent of the children were deficient in the milk group but of these children, only 33 per cent of the mothers and 11 per cent of the fathers indicated a dislike for 20 per cent or more of the milk products listed. Milk and dairy products were not named by any children as

least preferred foods and were named by some children as favorite foods. This agreed with data showing that milk and dairy products were selected most frequently from studies done by Fesmire (1965), Bryan and Lowenberg (1958), and McCarthy (1964) all of whom found milk and dairy products to be among the favorite foods of young children. Still, 36 per cent of the children were deficient in milk. After reviewing the dietary recall supplied by the parents, the researcher came to the conclusion that these deficiencies were due to soft drinks, juice drinks and tea being served to children with their meals and for snacks rather than milk and milk drinks.

Some observations were made concerning the frequency with which foods were chosen by the children. Foods in the milk and dairy product group, including white milk, pudding and ice cream were chosen more frequently than any other foods. This led the researcher to conclude that for this group of children, these foods were the most preferred. Because vegetables and fruits as a group were chosen least frequently, the researcher concluded that this food group was the least preferred. This conclusion coincided with information collected during individual interviews with the children in which vegetables were named by all children as least preferred foods and meats and dairy products were named most frequently as best liked foods. Vegetables were found to be least preferred by children in studies by McCarthy

(1946), Bryan and Lowenberg (1958), Dierks and Morse (1965), and Fesmire (1965). The children's dislike of the fruit and vegetable group helped to explain why so many children had deficiencies in this group.

The fact that the children chose plain foods more frequently than mixtures had been supported in studies by Davis (1935) and Bryan and Lowenberg (1958). In contrast to the Davis (1935) study, the Nursery School children preferred chocolate ice cream to strawberry or vanilla ice cream and preferred strawberry ice cream to vanilla. They also preferred chocolate pudding to vanilla pudding. This difference could be due to the fact that children at the time of the present study were much more familiar with the chocolate flavor than children would have been in 1935 because of the extensive use of it in products advertised for children and because of the extensive use of artificial flavors in foods.

After examining the frequency with which specific breads were chosen, the conclusion was drawn by the researcher that French bread and white bread were the most preferred. Rye bread was the least preferred. This could be attributed to several factors. The bread was served to the children as buttered toast and some of the children commented that the rye toast was "hard." Another factor which may contribute to rye bread being less popular was that

brown bread has not been accepted as well as white bread in the United States.

One of the shortcomings of this study occurred in determining the children's preferences by their intake. It could not be determined if foods were not chosen because they were disliked. Likewise, if a food was chosen but not eaten it was not known if this meant that the child disliked the food, that he got full before he tried the food or that he changed his mind about wanting it. This was illustrated by the child who consistently chose several vegetables and left them untouched on her plate. She gave no explanation when asked about this in the individual interview.

A weak point of the questionnaire was the omission of a column headed "never eaten." It could not be determined how parents categorized foods they had never eaten.

The results of the study contributed to the field of child nutrition. They reinforced the results of past research done in relation to children's preferences for milk and dairy products and their dislike of foods in the fruit and vegetables group. The results verified that mothers preferences do influence children's preferences.

The results could be useful in nutrition and parent education. The importance of parents accepting a wide variety of foods can be emphasized by showing the significant relationship between mothers' food preferences and children's food preferences and by discussing the deficient

diets exhibited by many of the children in this group. The parents of children who dislike vegetables and have deficiencies in this group can be exposed to methods of introducing new foods to their children and thereby improving their diets. It could also be pointed out to the parents that although the children indicated a preference for milk and dairy products, many were deficient in this group. With cooperation from the parents in including more milk in the children's diets this problem could be easily corrected.

Recommendations for Further Research

The results of this study suggest the need for further research. Further research is needed to determine the cause of the negative relationship between fathers' preferences and children's preferences. It is also suggested that a similar study be conducted using children of different ages to determine the effect age has on the relationship of the parents' preferences to the children's preferences. The study could also be repeated using children from different socioeconomic backgrounds to determine the relationship between parents' and children's preferences.

It is also recommended that a similar study be conducted after collecting more specific information about the families participating. The influence of the frequency of eating meals at home, with whom the children eat and who

prepares the food would be useful to know when studying the relationship of parents' food preference to children's preference.

CHAPTER V

SUMMARY

A study was conducted to determine the relationship of parents' food preferences to children's food preferences. The primary objectives of the study were:

(1) to determine if parental food preferences are related to the food preferences of three- and four-year-old children.

(2) to determine if parents assume that their own food preferences are shared by their three- and four-year-old children.

(3) to determine if parental food preferences may decrease children's chances of eating a balanced diet.

The participants in the study were 25 three- and four-year-old children attending the Nursery School in the Department of Child Development and Family Relations, School of Home Economics, the University of North Carolina at Greensboro and their parents. Questionnaires were sent to the parents asking each parent to first check his own food preferences to the foods listed and then to check his estimate of his child's or children's food preferences. The parents were instructed to refrain from discussing their answers with their spouse or their children. One parent,

either the mother or the father, was also asked to give a three day dietary recall for the child, excluding the lunches which were served at the Nursery School.

Children were served lunches consisting of foods listed on the questionnaire for four days each week for four weeks. The children ate cafeteria style, telling trained servers what they wanted. The servers gave the children standardized portions of each food chosen. Children could return to the serving table as many times as desired for all foods except desserts. Plate waste was recorded for all children each day.

Correlation coefficients were computed using the product moment method of correlation. The adequacy of each child's diet was determined by evaluating the dietary recall and the foods eaten at the Nursery School according to the list of dietary requirements of preschool children as given by Robinson (1972).

It was found that mothers' food preferences had a positive relationship to children's food preferences while fathers' food preferences had a negative relationship to children's food preferences. Mothers and fathers could predict children's food preferences, and fathers assumed that children's preferences were like their own. Fifty-two per cent of the children had diets deficient in the fruit and vegetable group, and 36 per cent had diets deficient in the milk and dairy products group. Plain foods were preferred

to mixtures, chocolate ice cream to strawberry and vanilla, and chocolate pudding to vanilla. French and white bread were preferred to oatmeal bread, cracked wheat bread, saltine crackers, and rye bread.

The researcher has concluded that parents' food preferences are related to children's food preferences. Knowledge about this relationship is important to the field of child nutrition.

BIBLIOGRAPHY

BIBLIOGRAPHY

Aldrich, M. M., & Lowenberg, M. E. Mealtimes with young children (Publication No. 146). State College: Pennsylvania State University, 1954.

Baker, D. W. & Ehlers, M. S. Acceptance of school lunch dishes studied. Journal of Home Economics, 1949, 14, 314-316.

Bryan, M. S., & Lowenberg, M. E. The father's influence on young children's food preferences. Journal of the American Dietetic Association, 1958, 34, 30-35.

Davis, C. M. Self-selection of food by children. American Journal of Nursing, 1935, 35, 403-410.

Dickins, D. Factors related to food preferences. Journal of Home Economics, 1965, 57, 427-430.

Dierks, E. C., & Morse, L. M. Food habits and nutrient intakes of preschool children. Journal of the American Dietetic Association, 1965, 47, 292-296.

Eppright, E. S., Fox, H. M., Fryer, B. A., Lomkin, G. H., & Vivian, V. M. Eating behavior of preschool children. Journal of Nutrition Education, Summer 1969, 16-19.

Fesmire, R. T. The selection and consumption of food by nursery school children. Unpublished masters thesis, University of North Carolina at Greensboro, 1965.

Hodge, J. S., The relationship of parent's food preferences and their claims on their children's preferences to the actual food consumption by their children at the nursery school. Unpublished maters thesis, University of North Carolina at Greensboro, 1963.

Ilg, F. L. The child's idea of what and how to eat. Journal of the American Dietetic Association, 1948, 24, 658-660.

Justice, C. L., Mattson, M. L., & Schuck, C. Some factors influencing the food intake of preschool children. Journal of the American Dietetic Association, 1946, 22, 128-130.

King, N. J. Relationship of the order of presentation of vegetables to amount selected and consumed by nursery school children. Unpublished masters thesis, University of North Carolina at Greensboro, 1967.

Lowenberg, M. E. Foods children like. Hygeia, November 1948, 792-793; 830.

McCarthy, D. Children's feeding problems in relation to the food aversions in the family. Child Development, 1935, 6, 277-284.

Metheny, N. Y., Hunt, F. E., Patton, M. B., & Heye, H. Factors in food acceptance. Journal of Home Economics 1962, 54, 303-308.

National Academy of Sciences. The relationship of nutrition to brain development and behavior. Chapel Hill: University of North Carolina, 1973.

North Carolina State Board of Health, Nutrition Section. Mother - this is for you. Raleigh: North Carolina State Board of Health, 1965 (N/8).

Pilgrim, F. J. What foods do people accept or reject? Journal of the American Dietetic Association, 1961, 38, 439-443.

Prevey, E. Self-service in a nursery school. Journal of Home Economics, June 1936, 376-379.

Robinson, C. H. Normal and therapeutic nutrition. New York: Macmillan, 1972.

Ross laboratories. Your child's appetite. Columbus, 1960.

Sweeny, M. E., & Eichelberger, M. The child's meals are family meals. Detroit: Merrill-Palmer School, (71 1002-5912), 1971.

Texas State Department of Health, Division of Maternal and Child Health. How to do it book for feeding children in group care centers. Austin: Texas State Department of Health, 1964.

The New York Times Magazine. The satiety factor. April 13, 1970.

United States Department of Agriculture. Food is more than just something to eat. Washington, D.C.: United States Department of Agriculture.

Appendix A

LETTERS TO PARENTS

January 15, 1975

Dear Parents:

As a graduate student in the field of Foods and Nutrition in the School of Home Economics I am conducting a study of food preferences of parents and foods selected by nursery school children.

We are asking your assistance and cooperation in this research project. We are asking the parents, both the mother and father, of each nursery school child for information regarding the parent's food preferences. Will you please read the instructions at the top of each sheet? The father is to fill out the blue sheet and the mother the pink sheet.

On or before Monday, January 20, 1975, please return both checked sheets in the self-addressed envelope attached, to Sally Stephens, UNC-G Nursery School, University of North Carolina, Greensboro, North Carolina, 27412. A second form will be mailed to you at a later date with instructions enclosed.

We appreciate your cooperation.

Yours very truly,

Sally Stephens
Graduate Student

Dr. Hellen Canaday
Professor
School of Home Economics

January 21, 1975

Dear Parents:

We are asking your cooperation for additional information in regard to the study of food preferences of parents and foods selected by nursery school children. We are asking the parents, both father and mother, of each nursery school child for information regarding the child's food preferences. Will you please read the instructions at the top of each sheet? The father is to fill out the blue sheet and the mother the pink sheet. The information provided is to be the sole opinion of the person checking the sheet. There is to be no consultation between the mother and father or between either parent and the child.

On or before Monday, January 27, 1975, please return both checked sheets in the self-addressed envelope enclosed to Sally Stephens, UNC-G Nursery School, University of North Carolina, Greensboro, North Carolina, 27412.

We appreciate your cooperation.

Yours very truly,

Sally Stephens
Graduate Student

Dr. Helen Canaday
Professor
School of Home Economics

APPENDIX B

QUESTIONNAIRES

SUBJECT: PARENT'S FOOD PREFERENCES

CHILD'S NAME_____ DATE_____

PARENT'S NAME_____ CHECK (X) FATHER X MOTHER___

Please check (×) to the left of each food listed below the foods which are served in your home.
Please check (×) to the right of each food the column which best describes your preference for those foods listed.
Do not discuss your answers with anyone.

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
MEATS AND MEAT SUBSTITUTES					
Beef chunks	14	5	1	0	0
Beef stew with peas and potatoes	13	4	2	1	0
Cheese, cheddar	13	8	1	1	0
Roast chicken	12	6	5	1	0
Chicken rise casserole	8	6	5	1	0
Frankfurters	12	7	4	0	0
Frankfurters and beans	9	4	6	0	1
Hamburger pattie	13	8	3	0	0
Hamburger on a bun	12	7	1	0	0
Baked ham	10	8	2	2	0
Ground ham load	2	4	6	1	2
Macaroni	4	5	9	0	0
Macaroni and cheese	12	8	2	1	0
Spaghetti with meat sauce	12	6	3	1	0
Tuna chunks	5	7	4	3	2
Tuna rice casserole	2	4	6	3	4

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
VEGETABLES					
COOKED					
Baked beans	12	5	5	0	2
Buttered green beans	14	4	4	0	2
Buttered lima beans	16	3	4	0	2
Buttered broccoli	9	5	4	2	4
Buttered carrots	3	8	5	5	1
Glazed carrots	3	8	5	4	0
Buttered peas	9	10	2	2	1
Boiled potatoes	11	9	4	0	0
Glazed sweet potatoes	8	6	8	1	0
Buttered rice	10	5	5	2	1
Buttered spinach	5	7	3	2	4
Buttered summer squash	8	5	4	1	4
Stewed tomatoes	6	3	7	1	4
RAW					
Broccoli	2	4	4	2	4
Carrot sticks	6	10	6	0	0
Cauliflower	3	7	3	2	6
Celery sticks	8	10	6	0	0
Cucumber slices	12	9	3	1	0
Lettuce leaves	13	10	1	0	0
Zuchini squash	2	3	4	4	3
FRUITS					
Apple wedges	13	7	1	0	0
Applesauce	13	7	0	3	0
Stewed apples	13	3	2	2	0
Apricot halves, canned	7	4	6	1	1
Peach slices, canned	13	8	3	0	0
Pear halves, canned	13	8	2	0	0
Pineapple chunks, canned	13	8	2	0	0

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
BREADS					
Cracked wheat bread	11	3	3	0	1
Cracked wheat toast	8	4	3	0	1
French bread	15	6	2	0	0
French bread, toasted	12	4	3	0	0
Oatmeal bread	2	1	3	4	1
Oatmeal toast	4	1	3	4	1
Rye bread	9	5	2	2	0
Rye toast	6	5	4	2	0
White bread	14	8	0	0	1
White toast	12	0	1	1	0
Yellow cake	14	3	4	0	0
Sugar cookies	10	5	6	1	0
Saltine crackers	9	8	5	3	0
Gingerbread	6	5	7	1	0
Gingerbread with lemon sauce	5	3	5	1	1
DAIRY PRODUCTS					
Ice cream					
Chocolate	13	5	4	0	0
Strawberry	5	11	5	1	0
Vanilla	8	11	3	0	0
Milk, white	15	3	3	2	0
Pudding					
Chocolate	11	6	2	3	0
Vanilla	7	6	3	3	0

SUBJECT: PARENT'S FOOD PREFERENCES

CHILD'S NAME_____ DATE_____

PARENT'S NAME_____ CHECK (X) FATHER___ MOTHER X

Please check (X) to the left of each food listed below the foods which are served in your home.
Please check (X) to the right of each food the column which best describes your preference for those foods listed.
Do not discuss your answers with anyone.

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
MEATS AND MEAT SUBSTITUTES					
Beef chunks	13	3	3	0	0
Beef stew with peas and potatoes	8	9	2	0	0
Cheese, cheddar	12	3	1	0	0
Roast checken	17	2	0	1	0
Chicken rice casserole	10	6	4	0	0
Frankfurters	8	11	1	1	0
Frankfurters and beans	8	7	5	2	0
Hamburger pattie	12	10	1	0	0
Hamburger on a bun	13	7	2	0	0
Baked ham	13	5	3	0	0
Ground ham loaf	1	7	5	0	1
Macaroni	2	11	3	1	1
Macaroni and cheese	7	8	4	0	0
Spaghetti with meat sauce	16	4	1	0	1
Tuna chunks	12	4	4	1	0
Tuna rice casserole	4	5	3	1	0

Food	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
VEGETABLES					
COOKED					
Bakes beans	11	7	2	2	1
Buttered green beans	12	8	2	0	0
Buttered lima beans	13	3	4	0	2
Buttered broccoli	19	3	2	1	0
Buttered carrots	7	10	1	0	2
Glazed carrots	7	6	3	0	2
Buttered peas	12	8	1	0	0
Boiled potatoes	11	6	3	0	0
Glazed sweet potatoes	11	7	1	1	0
Buttered rice	14	4	3	0	1
Buttered spinach	8	6	2	1	3
Buttered summer squash	14	6	2	1	0
Stewed tomatoes	5	7	3	0	2
Raw					
Broccoli	7	5	2	1	0
Carrot sticks	12	8	1	0	0
Cauliflower	15	4	1	0	1
Celery sticks	12	9	2	0	0
Cucumber slices	17	4	0	1	1
Lettuce leaves	17	5	0	0	0
Zuchini squash	4	4	4	1	0
FRUITS					
Apple wedges	17	5	0	0	1
Applesauce	17	4	1	0	0
Stewed apples	17	5	1	0	0
Apricot halves, canned	8	5	2	1	1
Peach slices, canned	11	6	5	0	0
Pear halves, canned	10	5	4	1	0
Pineapple chunks, canned	15	4	1	0	0

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
BREADS					
Cracked wheat bread	8	7	1	0	0
Cracked wheat toast	10	6	1	0	0
French bread	15	4	2	0	0
French bread, toasted	16	5	1	0	0
Oatmeal bread	5	4	2	1	0
Oatmeal toast	4	3	4	2	0
Rye bread	10	8	2	1	0
Rye toast	8	8	2	0	0
White bread	14	6	3	0	0
White toast	14	5	2	0	0
Yellow cake	0	0	0	0	0
Sugar cookies	15	4	1	0	0
Saltine crackers	10	6	7	0	0
Gingerbread	12	4	2	0	0
Gingerbread with lemon sauce	10	3	2	0	0
DAIRY PRODUCTS					
Ice cream					
Chocolate	15	7	2	0	0
Strawberry	10	7	4	1	1
Vanilla	16	4	3	0	0
Milk, white	11	5	0	6	1
Pudding					
Chocolate	10	7	3	0	1
Vanilla	7	7	2	3	0

SUBJECT: CHILD'S FOOD PREFERENCES

CHILD'S NAME_____ DATE_____

PARENT'S NAME_____ CHECK (X) FATHER X MOTHER___

Please check (X) to the left of each food listed below the foods which are served in your home.
Please check (X) to the right of each food the column which best describes your child's preference for those foods listed. This is to be your opinion alone. DO NOT DISCUSS THIS WITH THE CHILD OR THE OTHER PARENT.

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Apple wedges	16	8	1	0	0
Applesauce	15	7	3	1	0
Stewed apples	2	7	4	0	1
Apricot halves, canned	1	1	4	1	2
Baked beans	5	6	6	0	3
Buttered green beans	7	5	7	5	2
Buttered lima beans	3	8	6	1	3
Beef chunks	6	9	5	0	0
Beef stew with peas and potatoes	1	9	5	22	0
Cracked wheat bread	6	2	1	3	0
Cracked wheat toast	7	0	1	4	0
French bread	10	6	5	1	0
French bread, toasted	9	5	3	1	0
Oatmeal bread	1	0	1	0	0
Oatmeal toast	1	2	0	2	0
Rye bread	5	1	7	1	0
Rye toast	4	0	5	3	0
White bread	16	5	4	0	0
White toast	11	3	3	3	3

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Buttered broccoli	5	3	5	1	6
Broccoli, raw	3	1	3	0	2
Yellow cake	5	2	2	2	0
Buttered carrots	2	6	9	3	0
Glazed carrots	3	3	7	1	1
Raw carrot sticks	7	3	10	2	2
Raw cauliflower	3	2	5	3	4
Raw celery sticks	6	4	5	4	1
Cheese, cheddar	18	4	1	1	0
Roast chicken	11	5	5	0	0
Chicken rice casserole	8	7	3	0	0
Sugar cookies	18	1	3	0	0
Saltine crackers	17	5	2	0	0
Frankfurters	15	7	0	1	0
Frankfurters and beans	9	8	1	0	2
Gingerbread	10	1	1	1	0
Gingerbread with lemon sauce	7	2	1	1	0
Baked ham	8	7	3	1	1
Ground ham loaf	3	0	1	2	1
Hamburger pattie	16	6	3	1	0
Hamburger on a bun	17	6	0	1	0
Ice cream					
Chocolate	16	4	2	0	0
Strawberry	10	4	4	1	0
Vanilla	19	3	1	1	1
Lettuce leaves	4	5	7	3	1
Macaroni	8	5	3	0	0
Macaroni and cheese	13	6	2	1	0
Milk, white	8	11	4	0	1
Buttered peas	10	4	5	0	1

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Peach slices, canned	11	6	3	2	0
Pear halves, canned	13	6	3	3	0
Pineapple chunks, canned	8	7	3	1	0
Boiled potatoes	10	7	5	0	0
Glazed sweet potatoes	7	4	5	1	2
Pudding					
Chocolate	12	7	1	3	2
Vanilla	10	4	2	1	1
Buttered rice	12	5	1	1	0
Spaghetti with meat sauce	8	4	4	2	3
Buttered spinach	3	5	5	1	4
Buttered summer squash	1	4	3	2	4
Stewed tomatoes	3	3	4	2	4
Tuna chunks	4	4	1	2	2
Tuna rice casserole	3	3	2	0	5
Zuchini squash	2	0	2	1	2

SUBJECT: CHILD'S FOOD PREFERENCES

CHILD'S NAME_____ DATE_____

PARENT'S NAME_____ CHECK (X) FATHER___ MOTHER_X_

Please check (X) to the left of each food listed below the foods which are served in your home.
Please check (X) to the right of each food the column which best describes your child's preference for those foods listed. This is to be your opinion alone. DO NOT DISCUSS THIS WITH THE CHILD OR THE OTHER PARENT.

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Apple wedges	16	8	1	0	0
Applesauce	16	7	1	1	0
Stewed appless	4	3	5	2	1
Apricot halves, canned	2	3	5	3	2
Baked beans	5	10	3	2	2
Buttered green beans	6	7	5	2	3
Buttered lima beans	4	8	4	2	3
Beef chunks	6	7	7	0	0
Beef stew with peas and potatoes	3	8	3	3	1
Cracked wheat bread	4	1	4	1	1
Cracked wheat toast	5	1	4	2	0
French bread	12	6	3	1	0
French bread, toasted	11	6	2	0	0
Oatmeal bread	1	1	1	0	0
Oatmeal toast	2	0	3	4	0
Rye bread	3	3	2	2	4
Rye toast	8	4	2	0	1
White bread	17	4	3	0	0
White toast	14	4	1	1	4

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Buttered broccoli	2	3	4	5	4
Broccoli, raw	2	2	2	3	2
Yellow cake	6	3	3	3	1
Buttered carrots	3	4	2	1	4
Glazed carrots	5	3	4	2	3
Raw carrot sticks	8	4	1	2	2
Raw cauliflower	5	1	3	3	4
Raw celery sticks	5	5	4	5	1
Cheese, cheddar	16	5	1	0	0
Roast chicken	10	9	2	0	0
Chicken rice casserole	7	6	2	1	1
Sugar cookies	20	2	2	0	0
Saltine crackers	20	3	1	0	0
Frankfurters	16	5	1	3	0
Frankfurters and beans	10	5	2	0	0
Gingerbread	6	5	2	0	0
Gingerbread with lemon sauce	4	2	1	1	0
Baked ham	8	8	1	1	0
Ground ham loaf	3	3	0	0	1
Hamburger pattie	18	4	2	1	0
Hamburger on a bun	16	2	2	2	0
Ice cream					
Chocolate	19	1	3	0	0
Strawberry	13	5	2	2	0
Vanilla	15	5	1	3	1
Lettuce leaves	5	4	5	2	1
Macoroni	9	6	2	2	2
Macaroni and cheese	11	3	2	4	1
Milk, white	12	3	3	3	2
Buttered peas	6	7	8	1	2

FOOD	Like very much	Like moderately well	Accept indifferently	Dislike moderately	Dislike very much
Peach slices, canned	9	7	3	4	0
Pear halves, canned	7	10	2	2	0
Pineapple chunks, canned	12	7	2	2	1
Boiled potatoes	7	4	4	1	1
Glazed sweet potatoes	10	4	4	1	2
Pudding					
Chocolate	15	5	2	0	0
Vanilla	10	4	3	2	1
Buttered rice	13	5	2	0	2
Spaghetti with meat sauce	12	1	1	2	4
Buttered spinach	2	5	5	1	4
Buttered summer squash	2	1	3	2	1
Stewed tomatoes	2	1	3	1	5
Tuna chunks	3	2	1	0	4
Tuna rice casserole	4	2	1	0	3
Zuchini squash	1	2	3	1	5

APPENDIX C

INSTRUCTIONS TO TEACHERS

THE FOLLOWING INSTRUCTIONS ARE FOR TEACHERS SITTING AT THE TABLES WITH CHILDREN

1. You will eat after the children rather than with them.

2. You will receive a miemographed form for each child at your table. Complete the top section following the instructions. The menu and the amounts will be written in the second section. Put one line or check (✓) in the amount column for each serving the child gets on his plate, including the first serving of each food. PLATE WASTE WILL BE RECORDED BY THE RESEARCHER.

3. Avoid talking to the children about their food choices, the amounts selected, eaten, or not eaten. Conversation should be guided away from the subject of food. You should refrain from asking children to taste food.

4. As each child finishes give his name tag and ask him to put it onto his plate and return his plate to the researcher.

5. When a child wants an extra serving of milk, ask him to return to the serving table to get this.

6. Each child will go back to the serving table for his dessert. When the child finishes his dessert put the small name sticker on his dish and ask him to take it to the researcher.

7. When all children at your table have finished, bring the forms to the researcher.

APPENDIX D

INSTRUCTIONS TO SERVERS

THE FOLLOWING INSTRUCTIONS ARE FOR THE SERVERS

1. Standardized amounts of servings will be used:

Meat	1 tablespoon
Vegetables, cooked	1 tablespoon
Raw vegetables	1 piece
Bread	1 piece
Milk	2 ounces
Cookie	1
Fruit	2 tablespoons
Pudding	2 tablespoons
Ice cream	2 tablespoons

2. Milk will be poured and placed at each child's place before he selects his food. When second servings are desired the children will return their used cups to the researcher and then receive a new cup of milk.

3. When asking each child about which food he wants, always say the same thing to each child except when choices are given. Then rotate the order of the foods.

   Example: "Jimmy, would you like diced potatoes or potato salad?"
   "Susie, would you like potato salad or diced potatoes?"

4. Always require that each child name the food he wants rather than pointing to the food.

Number of people needed:

5 teachers	- 1 for each table of children
3 servers	- to measure and serve food
1 floater	- to assist children and/or care for spills or other accidents
1 researcher	- answers teachers and servers questions, receive plates, pour milk, and measure plate waste.
1 teacher	- to give instructions to children as they enter dining room

APPENDIX E

RECORDING FORMS

CHILD'S NAME_____ DATE_____

OBSERVER'S NAME_____

Under columns A and B check the blank which best describes the child's physical condition and emotional behavior on the particular day observed. Additional information should be written in the space provided.

A. Child's Physical Condition	B. Child's Emotional Behavior
___1. Feels definitely sick	___1. Upset
___2. Feels slightly sick	___2. Indifferent
___3. Feel all right	___3. Pleasant
___4. Feels unusually well	___4. Exuberant

COMMENT:

Each time the child returns from the serving table, place a line in the appropriate column after each food he has received on his plate.

DAY'S MENU	AMOUNT OF SERVING	NUMBER OF SERVINGS
Beef chunks	1 T.	
Potatoes	1 T.	
Carrots	1 t.	
Peas	1 t.	
Beef stew	1 T.	
Celery sticks	1	
Saltine crackers	1	
Cracked wheat toast	1	
Milk	2 oz.	
Peach slices	2 T.	
Sugar cookies	2	

CHILD'S NAME_____ DATE_____

Day's menu	Grams per serving	Servings selected	Grams selected	Grams returned	Grams consumed
Beef chunks					
Carrots					
Potatoes					
Peas					
Beef stew					
Celery sticks					
Saltine crackers					
Cracked wheat toast					
Milk					
Peach slices					
Sugar cookies					

APPENDIX F

INTERVIEW SCHEDULE

INTERVIEW SCHEDULE

1. Name some of your favorite foods.

2. Name some of the foods that you don't like.

3. Name as many of the foods pictured that you can.

4. Which ones do you like?

5. Which ones do you eat at home?

6. Using all the pictures, pick the foods you would like to eat for lunch today.

7. Can you think of any foods you have eaten at the Nursery that you don't like? Do you eat them at home?

8. Which foods that you eat at the Nursery do you like very much? Do you eat them at home?

APPENDIX G

CORRELATION COEFFICIENTS FOR TESTS OF PREFERENCES

CORRELATION COEFFICENTS FOR TESTS OF PREFERENCES

	r	df	p
FP[1]-PCF[2]	.56	23	.01
MP[3]-PCM[4]	.24	23	
FP[1]-CI[5]	-.87	23	.01
MP[3]-CI[5]	.69	23	.01
PCF[2]-CI[5]	.64	23	.01
PCM[4]-CI[5]	.47	23	.05

[1]FP - fathers' preferences

[2]PCF - preferences of the children as estimated by the fathers

[3]MP - mothers' preferences

[4]PCM - preferences of the children as estimated by the mothers

[5]CI - children's intake

APPENDIX H

NUMBER OF FOODS DISLIKED VERSUS NUMBER OF DISLIKED FOODS SERVED AT HOME

NUMBER OF FOODS DISLIKED VERSUS NUMBER OF DISLIKED FOODS SERVED AT HOME

	MOTHERS		FATHERS	
	Number of Disliked Foods	Number of Disliked Food Served	Number of Disliked Foods	Number of Disliked Food Served
1	0	0		
2	5	2	3	2
3	0	0	7	0
4	2	2	13	4
5	1	1	13	5
6			3	0
7	5	2	9	8
8	2	1	23	18
9	0	0	1	1
10	1	1	1	1
11	0	0	0	0
12	2	2	12	12
13	0	0	2	2
14				
15	1	1	3	0
16	4	4	0	0
17	6	3	0	0
18	1	1	6	5
19	1	1	0	0
20	9	8	8	2
21	0	0	5	2
22	3	3	8	8
23	5	0	10	3
24	0	0	1	1
25	0	0	2	1